

# Use of Placebo Interventions in Primary Care in Poland

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## Key Words

Clinical practice · Placebo · Primary care · Primary care physicians · Questionnaire survey

## Abstract

**Objective:** The aim of the study was to investigate the behavior, beliefs and attitudes of Polish primary care physicians concerning the use of placebo interventions. **Subjects and Methods:** A total of 220 Polish primary care physicians (internists, specialists in family medicine and pediatricians) were asked to participate in a questionnaire survey and 171 agreed to do so. The questionnaire was a self-report of the behavior, beliefs and attitudes of physicians concerning the use of placebo interventions in clinical practice. The percentages are based on the actual number of respondents to each question. **Results:** Of 169 respondents, 135 (80%) declared that they used or prescribed placebo interventions, with 20/169 (12%) doing so almost every day, 51/169 (30%) once a week and 44/169 (26%) once a month. The most common placebos used were vitamins (86/135, 66%) and homeopathy (73/135, 56%). Among the participants, 114/129 (84%) reported that the placebos were effective, with only 10/129 (8%) considering them rarely effective; 75/139 (54%) of the physicians considered placebo interventions to be effective only in patients with subjective symptoms, 116/139 (73%) indicated that individual traits of patients were decisive factors in the effectiveness of placebo interventions, and 103/159 (65%) thought that the expectations of patients

were of importance. A total of 128/170 (75%) respondents thought that the mechanism of placebo effects was purely psychological. **Conclusion:** The use and prescription of placebo interventions seemed to be very common among Polish primary care physicians studied and they generally had positive attitudes towards their use and effectiveness.

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## Introduction

Over 30 reports on placebo use in clinical practice have been published since the first questionnaire survey in this field was conducted in 1973 [1, 2]. Previous research has demonstrated that placebo use is very common among physicians and nurses, although the data on the scope and frequency of use are highly variable. In studies that were based on questionnaires and interviews, the usage of placebos was admitted by a proportion of both physicians (17–99%) and nurses (51–100%) [3]. Factors that might have contributed to the variability in the results include the country in which the research was conducted, the wording of questionnaires, the type of sample used (random, local or convenience), the cohort of participants (specialists, primary care physicians or nurses), the setting of the study (hospital, general practice or private practice), the response rate and the number of subjects.

The goal of the present study was to provide a preliminary estimate of the scope, frequency and types of pla-

cebo interventions used in clinical practice among a sample of primary care physicians in Poland, which has undergone major social and economic reforms, including reform of the healthcare system. A secondary goal of the study was to describe the behavior and attitude of Polish primary care physicians towards the use of placebo interventions in clinical practice.

## Subjects and Methods

### Participants

A total of 220 primary care physicians mainly from south-eastern Poland were asked personally by the interviewers to participate in the study, and 171 agreed to do so. Of these, 82 specialized in internal medicine, 50 in family medicine and 55 in pediatrics, while 16 of the respondents listed two of the three specialties mentioned above. The study was conducted by students of psychology participating in a course on the mechanisms of placebo effects. All of the physicians who agreed to participate in the study were given a hard copy of a questionnaire to fill. The sample examined was of the convenience type.

### Questionnaire

The questionnaire comprised a definition of nonspecific methods of treatment; six questions concerned individual traits of the physician (age, sex, specialization, length of work experience, place of work and number of patients seen weekly) and eight basic multiple-choice questions that concerned placebo use. The use of the term 'nonspecific methods of treatment' was preferred because previous studies have shown that explicit use of the term placebo decreases the number of participants who declare the use of placebo interventions in clinical practice [4, 5]. The following definition of nonspecific methods of treatment was provided in the questionnaire:

'For our purposes, we construe nonspecific methods of treatment to be all the medical substances, practices, and procedures whose efficacy is difficult to prove scientifically, even though they might seem efficacious. These may be pharmacological treatments of both inactive types (e.g. sugar pills, injections of saline), and active types, where the latter are used in cases in which – at least theoretically – they should have no impact on the symptoms of a patient (as with antibiotics in the treatment of viral illnesses, or vitamins taken for fatigue). The same method which is specific when it is used in one case (e.g. antibiotics in the treatment of bacterial infection) may be nonspecific in other case (e.g. antibiotics in the treatment of viral illnesses). Frequently, methods from natural and/or alternative medicine (e.g. homeopathy and certain physiotherapeutic procedures) are considered to be examples of nonspecific methods of treatment: they happen to be effective, yet the mechanism of their operation is often impossible to explain scientifically.'

The eight multiple-choice questions concerned the types of nonspecific methods used, the circumstances and reasons for their use, frequency of use, perceived effectiveness, symptoms treated effectively, factors that influenced effectiveness, the mechanisms of effects, and the ethics of their use. Some of the questions were inspired by those used in the survey of Nitzan and Lichtenberg [6]; however, they were adapted to the specific needs of primary care in Poland.

**Table 1.** Types of placebo intervention used or prescribed by 130 respondents

Types of placebo intervention	n (%)
Sugar pill	1 (1)
Saline	34 (26)
Vitamins (in case of no deficiency)	86 (66)
Dietary supplements (in case of no deficiency)	47 (36)
Homeopathy	73 (56)
Alternative medicine	17 (13)
Too small a dose of an active substance	6 (5)
An active substance that has no specific effect in the given case	16 (12)
Practices or procedures that have no specific effect in the given case	18 (14)
Switched-off medical devices	0 (0)
Other	6 (5)

As the respondents were allowed to choose more than 1 answer to a particular question, the percentages did not add up to 100.

### Data Management and Analysis

Descriptive statistics and frequencies were used to examine the individual traits of physicians and to report their behavior, beliefs and attitudes. The percentages were based on the actual number of respondents to each question. For questions that concerned only respondents who used or prescribed placebo interventions, the percentages were based on the actual number of respondents who answered the particular question and declared that they used or prescribed placebo interventions. When respondents were allowed to choose more than one answer to a particular question, the percentages did not add up to 100. All analyses were conducted with STATISTICA (version 9.0).

## Results

The mean age of the subjects was  $43.8 \pm 8.9$  years (range: 26–71). Of the 171 participants, 48 (28%) were males, 122 (72%) were females and 1 did not indicate his/her sex. The mean length of work experience was  $17.6 \pm 9$  years (range: 1–46), and the mean declared number of patients seen weekly was  $140.4 \pm 8$  (range: 10–560).

Of 169 respondents, 135 (80%) declared that they used or prescribed placebo interventions, with 20 (12%) doing so almost every day, 51 (30%) once a week on average, 44 (26%) once a month, and 20 (12%) once a year. Among those who used or prescribed placebo interventions, the most popular placebos were vitamins in patients with no deficiency ( $n = 86$ , 66%) and homeopathy ( $n = 73$ , 56%). Only 1 respondent declared that he or she used or prescribed sugar pills, 6 used or prescribed too small a dose

**Table 2.** Circumstances in which placebo interventions were used or prescribed as reported by 136 respondents

Circumstances of placebo use	n (%)
When there is no specific method to treat a condition	39 (29)
Instead (in the guise) of a specific method when using that method was not justified	32 (24)
Instead (in the guise) of a specific method that could harm the patient	19 (14)
Instead (in the guise) of a specific method demanded by the patient	30 (22)
Instead of a specific method – between 1 dose and the next dose of a specific method	21 (15)
As a supplement to a specific method	74 (54)
To calm the patient	62 (46)
To fulfill the patient's wish to receive that method	40 (29)
To avoid informing the patient that treatment possibilities are exhausted	11 (8)
As a diagnostic tool to distinguish between genuine and imaginary symptoms, or organic and psychological (functional) symptoms	28 (21)
As a treatment for a nonspecific symptom	30 (22)
As an analgesic	9 (7)
In other conditions	0 (0)

As the respondents were allowed to choose more than 1 answer to a particular question, the percentages did not add up to 100.

of active substances, and none used switched-off medical devices (table 1). Of 136 respondents, 74 (54%) used or prescribed placebo interventions most often as a supplement to a specific method and to calm patients ( $n = 62$ , 46%). Rarely were placebo interventions used or prescribed to avoid informing patients that treatment possibilities were exhausted ( $n = 11$ , 8%) or as analgesics ( $n = 9$ , 7%; table 2).

Of 129 respondents who used or prescribed placebo interventions, 114 (88%) observed that they were more or less effective. Of these 129, 2 (2%) considered them always effective, 36 (28%) usually effective, 66 (51%) sometimes effective, and 10 (8%) rarely effective. None of the respondents who used or prescribed placebo interventions thought that they were never effective; 15 respondents (12%) thought it was difficult to assess placebo effectiveness. Of 139 respondents who used or prescribed placebo interventions, 75 (54%) thought that they were effective for subjective symptoms, only 8 (6%) perceived their effectiveness for objective symptoms, and 34 (24%) considered them effective for both subjective and objective symptoms, while 19 respondents (11%) had difficulty deciding whether or not they were effective.

Regarding decisive factors for the efficacious use of placebo interventions (table 3), where respondents were asked to choose more than one answer, of the 159 respondents, 116 (73%) indicated that individual traits of patients such as personality were the most frequently decisive factors in the effectiveness of placebo interventions,

**Table 3.** Decisive factors in the effectiveness of placebo interventions as reported by 159 respondents

Factors influencing the effectiveness of placebo interventions	n (%)
Individual traits of patients (e.g. personality)	116 (73)
Traits of the physician (e.g. communication skills)	46 (29)
Patient expectations	103 (65)
Physician expectations	11 (7)
Type of illness	30 (19)
Specific case	77 (46)
Effectiveness of active substance or method under the guise of which placebo is given	7 (4)
Difficult to tell	11 (7)
Other	3 (2)

The participants who thought that nonspecific methods were never effective were not required to answer this question. As the respondents were allowed to choose more than 1 answer to a particular question, the percentages did not add up to 100.

followed by patient expectations ( $n = 103$ , 65%), physician expectations ( $n = 11$ , 7%), and the effectiveness of the active substance or method under the guise of which placebo was given ( $n = 7$ , 4%).

Of the 170 respondents, 128 (75%) thought that the mechanism of placebo effects was psychological while 25 (15%) believed that it was biochemical in nature. Of these 170, 48 (28%) thought that placebo effects were part of the natural course of the illness (spontaneous remission)

while 45 (26%) thought that the mechanism of placebo effects was unexplained; 10 (6%) had no idea about the mechanism, and 5 (3%) thought that there were other mechanisms that were not mentioned among the proposed answers.

Of 167 respondents, 155 (93%) considered placebo use in clinical practice as permissible; 10 (6%) respondents thought that placebo use was always permissible; 48 (29%) thought it to be allowable after patients had been informed they would receive it; 82 (49%) thought that placebo use was permissible if the results of clinical research supported its effectiveness in a particular case, and 101 (60%) considered placebo use to be justified if the experience of the physician or medical staff supported its effectiveness. Only 12 (7%) of the respondents thought that placebo use in clinical practice should be always prohibited.

## Discussion

The results of this study showed that the use of placebo interventions was very common among Polish primary care physicians. The 80% rate of placebo use in the present study was similar to that obtained in countries near Poland, i.e. Germany (88%) [7] and Denmark (86%) [8]. However, it was much higher than that in the USA, where the rate was 45% [9] or 56% [10]. The 68% frequency of use of placebo interventions reported in the present study was very high compared to 8–19% [9, 10] in US studies. The difference could have resulted from the wording of the questions. In the present study, respondents were allowed to choose between answers that concerned shorter periods of time (e.g. every day, once a week or once a month), whereas in the US studies, the subjects were asked to assess how many times per year they used placebo interventions (e.g. 1–10 times, >10 times). However, in a Dutch study [8] that used a similar format to the US studies, the 48% frequency of use of placebo interventions was closer to that in the present study. It should also be noted that in the present study participants were asked about the frequency of use of nonspecific methods but in the previous studies they were asked explicitly about the use of placebo. It has been demonstrated experimentally that participants who were asked explicitly about the use of placebo interventions reported significantly less use of placebo interventions than participants who were asked about the use of nonspecific treatment methods [4]. Moreover, in the present study, respondents were asked how often they used or prescribed nonspecific methods of treatment, without specifying the period of time,

whereas in the US and Dutch studies, the subjects were asked how often during the last year they had used placebo interventions [8, 9].

The types of placebo intervention that were most popular (vitamins) among Polish primary care physician participants were also often used by physicians in other countries such as Denmark [8] and Germany [7], while they were not so popular among US physicians [9, 10]. Homeopathy seemed to be also very popular among participants, of whom 56% declared to use homeopathic remedies. A similar rate of homeopathy use (62%) was found in Germany [7] and in the previous Polish study (44–47%) [4]. However, apart from Polish surveys, the German study [7] is the only one found in which participants were explicitly asked about homeopathy use, so it is difficult to conclude if such a high rate of its use in Poland and Germany is exceptional. Although complementary and alternative medicine is popular [11], only 13% of respondents reported using alternative medicine methods. In general, Polish primary care physician participants used impure placebos (therapies that contain active components but are considered ineffective for the condition being treated, e.g. vitamins or dietary supplements in case of no deficiency) rather than pure placebos (inert interventions, e.g. sugar pills or saline).

It is difficult to compare the remaining results of the study owing to the different answers offered to respondents in different surveys. However, if the possible answers provided were similar, the remaining results of the study are generally similar to those obtained in other countries, i.e. Denmark [8], Israel [6] and the USA [5, 9, 10]. However, there are also some differences. For example, most of the surveyed physicians in Poland (54%) and Denmark (51%) [8] considered placebo interventions to be effective only for subjective symptoms, but according to 85% of US physicians, the placebo effect can have both physical and psychological benefits [10]. Both in the present study and in an Israeli study [6], 75% of respondents thought that the mechanism of placebo effects was purely psychological, whereas the corresponding rate was 92% in the USA [9]. For almost all of the surveyed physicians in Poland, the USA [5, 9, 10] and Israel [6], but only for 46% of the surveyed physicians in Denmark [8], placebo use in clinical practice is permissible. As most of the differences in the results were found between US and European studies, they may have resulted from differences in the health care system, medical education and culture. However, although there are some differences in the results obtained in different countries, they have much more in common.



Three of the results require comment. First, most Polish primary care physicians participating in the study thought that placebo interventions were effective only for subjective symptoms. Second, most thought that the mechanism of placebo effects was purely psychological. Third, most of the study participants thought that traits and expectations of patients were decisive in the effectiveness of placebo interventions. These beliefs contrast with the results of research on placebo effects which proved that placebo was effective for both subjective and objective symptoms, the mechanism of placebo effects was both psychological and biochemical in nature, and traits of patients were much less important for the effectiveness of placebo interventions than patient and physician expectations (see [12, 13] for reviews of the studies on placebo effects). Although these misunderstandings might reflect poor education concerning placebo effects during medical studies in Poland, similar ones have also been found in studies conducted in Denmark [8] and Israel [6].

The limitations of this study include the convenience sampling method used, such that the results might not be representative of the population of primary care physicians in Poland. However, the results are consistent with those of other published questionnaire surveys on placebo use in clinical practice and seem to describe accurately

ly the behavior, beliefs and attitudes of Polish physicians with respect to the use of placebo interventions in clinical practice. The measured outcomes were self-reported and retrospective and the definition of 'nonspecific methods of treatment' used in the questionnaire was specific to the study and there is no certainty that the respondents familiarized themselves fully with; also, the definition was relatively long, which might have discouraged its full comprehension.

As only over 30 reports on placebo use in clinical practice have been published so far, it can be concluded that more research is needed in this field. In particular, there have been only a few questionnaire surveys on placebo use in nursing. Little is still known about the attitudes of patients regarding placebo use in clinical practice. Moreover, none of the studies conducted so far was aimed at searching for individual differences in placebo use by physicians or nurses.

## Conclusion

The use and prescription of placebo interventions was very common among studied Polish primary care physicians, who generally had a positive attitude towards their use and effectiveness.

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